UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,166	05/24/2001	Raymond T. Hsu	PA010115	2831

23696 7590 08/22/2005

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER	
RYMAN, DANIEL J	
ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/865,166	HSU ET AL.	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-127* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-127* is/are rejected.

7)☒ Claim(s) *112* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 September 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ref. 206 (see pages 11-12, paragraph 1038, and Fig. 2) and ref. 1016 (see pages 21-22, paragraph 1090, and Fig. 10). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Examiner requests that Applicant update the application information seen on page 9, lines 7-8 in order to reflect any changes in the status of this application.

Claim Objections

3. Claim 112 is objected to because of the following informalities: in line 1 "casue" should be "cause". Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 5-8, 19, 20, 23-28, 31-38, 41-46, 49-52, 54, 55, 66-69, 72-77, 80-83, 94, 95, 98-101, 112, 113, 116-121, and 124-127 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Puuskari (USPN 6,728,208).

6. Regarding claims 1, 27, 35, 45, 66, and 76, Applicant admits as prior art in a wireless communication system, a method comprising the steps of and a wireless device comprising means for: establishing a first Point-to-Point Protocol link having an Internet Protocol Address (page 1, paragraph 1002-page 5, paragraph 1010). Applicant does not express as prior art establishing a second Point-to-Point Protocol link having the same Internet Protocol Address as the first Point-to-Point Protocol link and differentiating the endpoints of the first Point-to-Point Protocol link and the second Point-to-Point Protocol link using a link characteristic. Puuskari teaches, in a wireless communication system, establishing a first PPD channel having an Internet Protocol Address (col. 1, lines 54-58; col. 4, lines 13-24; and col. 6, lines 12-20); establishing a second PDP channel having the same Internet Protocol Address as the first PDP channel (col. 3, lines 16-32 (problem) and col. 4, lines 13-24 (solution)); and differentiating the endpoints of the first PDP channel and the second PDP channel using a link characteristic (col. 4, lines 13-24). Puuskari also teaches that the concepts of this invention can be used in any packet data communication network (col. 5, lines 12-16) and in any wireless communication network (col.

16, lines 45-53) including PPP networks (col. 15, lines 36-38). Puuskari teaches that this invention enables any number of PDP contexts tied to the same IP address to be used simultaneously (col. 4, lines 13-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to establish a second Point-to-Point Protocol link having the same Internet Protocol Address as the first Point-to-Point Protocol link and to differentiate the endpoints of the first Point-to-Point Protocol link and the second Point-to-Point Protocol link using a link characteristic in order to enable any number of PPP links tied to the same IP address to be used simultaneously.

Regarding claim 19, incorporating the rejection of claim 1, Applicant in view of Puuskari discloses each limitation in claim 19, as seen in the rejection of claim 1, except for providing multiple grades of Radio Link Protocol service to an application of a wireless device. Applicant in view of Puuskari suggests providing multiple grades of Radio Link Protocol service to an application of a wireless device. Puuskari teaching including in each packet transmitted by an application a QoS parameter which will be used to enforce the QoS requirements for that packet (col. 4, lines 13-24). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide multiple grades of RLP service to an application in a wireless device in order to allow an application to differentiate between QoS requirements for a particular packet.

Regarding claims 94 and 120, incorporating the rejection of claim 1, Applicant in view of Puuskari discloses each limitation in claims 94 and 120, as seen in the rejection of claim 1, except for implementing the method using a computer-readable medium having instructions stored thereon to cause computers in a communication system to perform the method. Examiner

takes official notice that it is well known in the art to implement a method using software since software is more flexible than hardware. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method using software since software is more flexible than hardware.

Regarding claim 112, incorporating the rejection of claim 19, Applicant in view of Puuskari discloses each limitation in claim 112, as seen in the rejection of claim 19, except for implementing the method using a computer-readable medium having instructions stored thereon to cause computers in a communication system to perform the method. Examiner takes official notice that it is well known in the art to implement a method using software since software is more flexible than hardware. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method using software since software is more flexible than hardware.

7. Regarding claims 2, 20, 28, 38, 46, 69, 77, 95, 113, and 121, Applicant in view of Puuskari discloses that the link characteristic is Quality of Service (Puuskari: col. 4, lines 13-24; col. 4, lines 35-58; and col. 5, lines 19-26).

8. Regarding claims 5, 23, 31, 41, 49, 72, 80, 98, 116, and 124, Applicant in view of Puuskari suggests that the link characteristic is Radio Link Protocol transmission delay (Applicant: pages 4-5, paragraph 1010 and Puuskari: col. 2, lines 23-35, esp. col. 2, lines 26-27, and col. 4, lines 44-54).

9. Regarding claims 6, 24, 32, 42, 50, 73, 81, 99, 117, and 125, Applicant in view of Puuskari suggests that the link characteristic is guaranteed delivery level (Applicant: pages 4-5, paragraph 1010 and Puuskari: col. 2, lines 23-35, esp. col. 2, lines 28-35, and col. 4, lines 44-54).

10. Regarding claims 7, 25, 33, 43, 51, 54, 74, 82, 100, 118, and 126, Applicant in view of Puuskari discloses that the wireless device uses Simple Internet Protocol service (Applicant: page 3, paragraph 1008).

11. Regarding claims 8, 26, 34, 44, 52, 55, 75, 83, 101, 119, and 127, Applicant in view of Puuskari discloses that the wireless device uses Mobile Internet Protocol service (Applicant: page 3, paragraph 1008).

12. Regarding claims 36 and 67, Applicant in view of Puuskari discloses that the wireless network node is a Packet Data Service Node (Applicant: pg. 3, paragraph 1007).

13. Regarding claims 37 and 68, Applicant in view of Puuskari discloses that the wireless network node is an Interworking Function (Applicant: pg. 3, paragraph 1007).

14. Claims 3, 21, 29, 39, 47, 70, 78, 96, 114, and 122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Puuskari (USPN 6,728,208) as applied to claims 1, 19, 27, 35, 45, 66, 76, 94, 112, and 120 above, and further in view of Sen et al. (USPN 6,765,909).

15. Regarding claims 3, 21, 29, 39, 47, 70, 78, 96, 114, and 122, Applicant in view of Puuskari does not expressly disclose that the link characteristic is compression type; however, Applicant in view of Puuskari does suggest that various characteristics could be used (Puuskari: col. 5, lines 19-26). Sen discloses, in a system for supporting multiple QoS levels in a 3G packet data session, that PPP supports different types of compression schemes that can be used to distinguish one connection from another (col. 2, lines 35-41 and col. 6, lines 39-45). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have

the link characteristic be compression type since PPP supports different types of compression schemes that can be used to distinguish one connection from another.

16. Claims 4, 22, 30, 40, 48, 71, 79, 97, 115, and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Puuskari (USPN 6,728,208) as applied to claims 1, 19, 27, 35, 45, 66, 76, 94, 112, and 120 above, and further in view of Chuah et al. (USPN 6,400,722).

17. Regarding claims 4, 22, 30, 40, 48, 71, 79, 97, 115, and 123, Applicant in view of Puuskari does not expressly disclose that the link characteristic is encryption level; however, Applicant in view of Puuskari does suggest that various characteristics could be used (Puuskari: col. 5, lines 19-26). Chuah teaches, in a wireless system supporting PPP and IPCP (col. 10, lines 33-45 and col. 11, lines 21-42), that PPP packets can be encrypted before being encapsulated in RLP if encryption is negotiated between the mobile user and the home agent (col. 29, lines 48-59). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the link characteristic be encryption level since PPP supports different levels of encryption that can be used to distinguish one connection from another.

18. Claims 9-12, 15-18, 53, 56-59, 62-65, 84-87, 90-93, 102-105, and 108-111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Puuskari (USPN 6,728,208) in further view of McGregor (G. McGregor, "The PPP Internet Protocol Control Protocol (IPCP)", Network Working Group: RFC 1332, page 7.).

19. Regarding claims 9, 53, 56, 84, and 102, incorporating the rejection of claims 1 and 94, Applicant in view of Puuskari discloses each limitation in claims 9, 53, 56, 84, and 102, as seen in the rejection of claims 1 and 94, except using an Internet Protocol Control Protocol

Configuration-Request message requesting the Internet Protocol Address of the initial Point-to-Point Protocol session in an Internet Protocol Address Configuration Option of the message, issued from the wireless device to the wireless network node; searching for and finding, by the wireless network node, the initial Point-to-Point Protocol session with an Internet Protocol Address matching the requested Internet Protocol Address of the subsequent Point-to-Point Protocol session and a Mobile Station Identifier matching the Mobile Station Identifier of the wireless device; concluding, by the wireless network node, that the subsequent Point-to-Point Protocol session is a multiple Point-to-Point Protocol session event; and accepting, by the wireless network node, the requested Internet Protocol address for the subsequent Point-to-Point Protocol session and acknowledging the acceptance in an Internet Protocol Control Protocol Configuration-Acknowledgement message returned to the wireless device having the requested Internet Protocol Address in the Internet Protocol Address Configuration Option of the Configuration-Acknowledgement message. However, Applicant teaches as prior art that the IPCP is a well-known protocol (page 9, lines 1-3). McGregor teaches that IPCP uses an Internet Protocol Control Protocol Configuration-Request message, issued from the wireless device to the wireless network node, to request an Internet Protocol Address for a PPP session using the Internet Protocol Address Configuration Option of the message (page 7). McGregor also suggests that the wireless network node accepts the requested IP address for a subsequent PPP session and acknowledges the acceptance in an Internet Protocol Control Protocol Configuration-Acknowledgement message returned to the wireless device which has the requested Internet Protocol Address in the Internet Protocol Address Configuration Option of the Configuration-Acknowledgement message. Puuskari suggests searching for and finding, by the

wireless network node, the initial session with an Internet Protocol Address matching the requested Internet Protocol Address of the subsequent session and a Mobile Station Identifier (IMSI) matching the Mobile Station Identifier (IMSI) of the wireless device and concluding, by the wireless network node, that the subsequent session is a multiple Point-to-Point Protocol session event (col. 7, lines 49-65 and col. 9, lines 18-28) since the IMSI uniquely identifies the addresses used by a mobile station. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to initiate a subsequent Point-to-Point Protocol session between the wireless device and the wireless network node, by using an Internet Protocol Control Protocol Configuration-Request message requesting the Internet Protocol Address of the initial Point-to-Point Protocol session in an Internet Protocol Address Configuration Option of the message, issued from the wireless device to the wireless network node; to search for and to find, by the wireless network node, the initial Point-to-Point Protocol session with an Internet Protocol Address matching the requested Internet Protocol Address of the subsequent Point-to-Point Protocol session and a Mobile Station Identifier matching the Mobile Station Identifier of the wireless device; to conclude, by the wireless network node, that the subsequent Point-to-Point Protocol session is a multiple Point-to-Point Protocol session event; and to accept, by the wireless network node, the requested Internet Protocol address for the subsequent Point-to-Point Protocol session and acknowledging the acceptance in an Internet Protocol Control Protocol Configuration-Acknowledgement message returned to the wireless device having the requested Internet Protocol Address in the Internet Protocol Address Configuration Option of the Configuration-Acknowledgement message since these steps occur in the well-

known IPCP where the Mobile Station Identifier uniquely identifies all of the connections for a mobile station.

20. Regarding claims 10, 57, 85, and 103, Applicant in view of Puuskari in further view of McGregor discloses that the wireless network node is a Packet Data Service Node (Applicant: pg. 3, paragraph 1007).

21. Regarding claims 11, 58, 86, and 104, Applicant in view of Puuskari in further view of McGregor discloses that the wireless network node is an Interworking Function (Applicant: pg. 3, paragraph 1007).

22. Regarding claims 12, 59, 87, and 105, Applicant in view of Puuskari in further view of McGregor discloses that the link characteristic is Quality of Service (Puuskari: col. 4, lines 13-24; col. 4, lines 35-58; and col. 5, lines 19-26).

23. Regarding claims 15, 62, 90, and 108, Applicant in view of Puuskari in further view of McGregor suggests that the link characteristic is Radio Link Protocol transmission delay (Applicant: pages 4-5, paragraph 1010 and Puuskari: col. 2, lines 23-35, esp. col. 2, lines 26-27, and col. 4, lines 44-54).

24. Regarding claims 16, 63, 91, and 109, Applicant in view of Puuskari in further view of McGregor suggests that the link characteristic is guaranteed delivery level (Applicant: pages 4-5, paragraph 1010 and Puuskari: col. 2, lines 23-35, esp. col. 2, lines 28-35, and col. 4, lines 44-54).

25. Regarding claims 17, 64, 92, and 110, Applicant in view of Puuskari in further view of McGregor discloses that the wireless device uses Simple Internet Protocol service (Applicant: page 3, paragraph 1008).

26. Regarding claims 18, 65, 93, and 111, Applicant in view of Puuskari in further view of McGregor discloses that the wireless device uses Mobile Internet Protocol service (Applicant: page 3, paragraph 1008).

27. Claims 13, 60, 88, and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Puuskari (USPN 6,728,208) in further view of McGregor (G. McGregor, "The PPP Internet Protocol Control Protocol (IPCP)", Network Working Group: RFC 1332, page 7.) as applied to claims 9, 56, 84, and 102 above, and further in view of Sen et al. (USPN 6,765,909).

28. Regarding claims 13, 60, 88, and 106, Applicant in view of Puuskari in further view of McGregor does not expressly disclose that the link characteristic is compression type; however, Applicant in view of Puuskari does suggest that various characteristics could be used (Puuskari: col. 5, lines 19-26). Sen discloses, in a system for supporting multiple QoS levels in a 3G packet data session, that PPP supports different types of compression schemes that can be used to distinguish one connection from another (col. 2, lines 35-41 and col. 6, lines 39-45). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the link characteristic be compression type since PPP supports different types of compression schemes that can be used to distinguish one connection from another.

29. Claims 14, 61, 89, and 107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Puuskari (USPN 6,728,208) in further view of McGregor (G. McGregor, "The PPP Internet Protocol Control Protocol (IPCP)", Network Working Group: RFC 1332, page 7.) as applied to claims 9, 56, 84, and 102 above, and further in view of Chuah et al. (USPN 6,400,722).

30. Regarding claims 14, 61, 89, and 107, Applicant in view of Puuskari in further view of McGregor does not expressly disclose that the link characteristic is encryption level; however, Applicant in view of Puuskari does suggest that various characteristics could be used (Puuskari: col. 5, lines 19-26). Chuah teaches, in a wireless system supporting PPP and IPCP (col. 10, lines 33-45 and col. 11, lines 21-42), that PPP packets can be encrypted before being encapsulated in RLP if encryption is negotiated between the mobile user and the home agent (col. 29, lines 48-59). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the link characteristic be encryption level since PPP supports different levels of encryption that can be used to distinguish one connection from another.

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goyal et al. (USPN 6,466,985) see entire document which pertains to providing quality of service using IP.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600